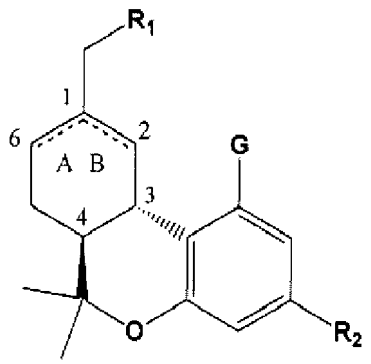
Amendments to the Claims

The following listing of claims replaces all prior listings and version of claims in this application.

1. (Previously Presented) A compound of the general Formula (I):



having the (3S,4S) configuration and being essentially free of the (3R,4R) enantiomer, wherein A-----B indicates an optional 1(2) or 6(1) double bond,

R_1 is

A) R_3 where R_3 is selected from the group consisting of

a) a linear or branched, saturated or unsaturated, carbon side chain comprising 1-8 carbon atoms and 1-3 heteroatoms, at least one heteroatom being placed between two carbon atoms; or

b) a saturated or unsaturated cyclic moiety or an aromatic or heterocyclic moiety having from 5-20 atoms comprising one or two-ringed structures, wherein each ring comprises 3-8 carbons and 0-4 heteroatoms,

said heteroatoms each independently selected from the group consisting of N, O, and S; wherein each ring optionally is further substituted with one or more groups selected from

i) C_{1-6} alkyl,

ii) C_{1-6} alkoxy,

iii) C_{1-6} alkylthio,

iv) halo,

v) carboxyl,

vi) $-CO_2-C_{1-4}$ alkyl,

vii) keto,

viii) nitro, and

ix) a saturated or unsaturated cyclic moiety, or an aromatic or a heterocyclic moiety having from 5-20 atoms comprising one or two ringed structures, wherein each ring comprises 3-8 carbons and 0-4 heteroatoms, said heteroatoms each independently selected from the group consisting of N, O, and S;

wherein each ring optionally is further substituted with one or more groups selected from i)-viii) as defined above;

B) an amine or an amide substituted with at least one substituent as defined in R_3 above;

C) a thiol, a sulfide, a sulfoxide, a sulfone, a thioester or a thioamide optionally substituted with one substituent as defined in R_3 above; or

D) an ether $-OR_3$ wherein R_3 is as defined above;

G is (a) halogen, (b) C_1-C_6 alkyl, or (c) -OR wherein R is (a') -R'', wherein R'' is hydrogen or C_1-C_6 alkyl optionally containing a terminal -OR''' or -OC(O)R''' moiety wherein R''' is hydrogen or C_1-C_6 alkyl, or (b') -C(O)R''' wherein R''' is as previously defined, and

$\mathbf{R_2}$ is (a) C_1-C_{12} alkyl, (b) -OR'''', in which R'''' is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) $-(CH_2)_nOR'''$ wherein n is an integer of 1 to 7 and R''' is hydrogen or C_1-C_6 alkyl;

with the proviso that $\mathbf{R_1}$ is other than a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue.

2. (Previously Presented) The compound according to claim 1 wherein $\mathbf{R_1}$ is a saturated or unsaturated cyclic moiety, an aromatic moiety or a heterocyclic moiety having from 5-20 atoms comprising one or two-ringed structures, wherein each ring comprises 3-8 carbons and 0-4 heteroatoms, said heteroatoms each independently selected from the group consisting of N, O, and S; optionally further substituted with at least one substituent selected from the group consisting of lower alkyl, halogen, nitro, cyano, -SR''', -NHR''', $-N(R''')_2$,

-OR''', -COR''', -C(O)OR''' or NH-COR''' moiety wherein R''' is hydrogen or C_1-C_6 alkyl.

3. (Original) The compound according to claim 1 wherein $\mathbf{R_1}$ is a heterocyclic moiety selected from the group consisting of an imidazolyl, an imidazolinyl, a morpholino, a piperidyl, a piperazinyl, a pyrazolyl, a pyrrolyl, a pyrrolidinyl, a triazolyl, and a tetrazolyl, optionally further substituted wherein the substituent is selected from the group consisting of C_{1-6} alkyl, C_{1-6} alkyloxy, C_{1-6} alkylthio, keto, carboxy, or nitro, wherein C_{1-6} alkyl, C_{1-6} alkoxy and C_{1-6} alkylthio are intended to include saturated and unsaturated linear, branched and cyclic structures.

4. (Original) The compound according to claim 1 wherein $\mathbf{R_1}$ is imidazolyl, pyrazolyl, 2-methyl thio-2-imidazolinyl, or 4-methylpiperidinyl.

5. (Original) The compound according to claim 1 wherein A-----B is a 6(1) double bond and **G** is –OH or lower acyloxy.

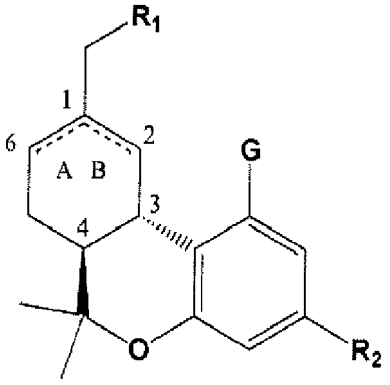
6. (Original) The compound according to claim 5 wherein $\mathbf{R_2}$ is 1,1-dimethylheptyl or 1,2-dimethylheptyl and wherein $\mathbf{R_1}$ is selected from the group consisting of imidazole, pyrazole, oxazole, isoxazole, tetrahydropyridine, pyrazoline, oxazoline, pyrrolidine, imidazoline, 2-thio-imidazole, 2-methylthio-imidazoline, 4-methyl-2-imidazoline, 4,4-dimethyl-2-imidazoline, methyl sulfide, methylsulfoxide, acetamido, benzamide, cyano, 1,2,4-triazole, 1,3,4-triazole, 1,2,3,4-tetrazole, 1,2,3,5-tetrazole, thiophene, phenyl, morpholine, thiomorpholine, thiazolidine, glycerol, piperazine, piperidine and tetrahydropyran, optionally further substituted wherein the substituent is selected from the group consisting of C_{1-6} alkyl, C_{1-6} alkyloxy, C_{1-6} alkylthio, keto, carboxy , or nitro, wherein C_{1-6} alkyl, C_{1-6} alkoxy and C_{1-6} alkylthio are intended to include saturated and unsaturated linear, branched and cyclic structures.

7. (Original) The compound according to claim 6 wherein $\mathbf{R_1}$ is imidazole, pyrazole, 2-methyl thio-2-imidazoline, or 4-methylpiperidine.

8. (Original) The compound according to claim 1 wherein A-----B is absent and **G** is -OH or lower acyloxy.

9. (Previously Presented) The compounds according to claim 1 selected from the group consisting of: (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(imidazolomethyl)-6a,7,10,10a-tetrahydro-6H-dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1 -hydroxy-9-(pyrazolomethyl)-6a,7,10,l0a- tetrahydro-6H-dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(1H-imidazol-2-ylsulfanyl methyl)-6a,7,10,10a- tetrahydro-6H- dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(4-piperidinopiperidine methyl)-6a,7,10,10a- tetrahydro-6H-dibenzo[b,d]pyran; and (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(4-methylpiperidine methyl)-6a,7,10,10a-tetrahydro-6H-dibenzo[b,d]pyran.

10. (Previously Presented) A pharmaceutical composition comprising as an active ingredient a compound of the general formula (I):



having the (3S,4S) configuration and being essentially free of the (3R,4R) enantiomer, wherein A-----B indicates an optional 1(2) or 6(1) double bond,

R_1 is

A) R_3 where R_3 is selected from the group consisting of

a) a linear or branched, saturated or unsaturated, carbon side chain comprising 1-8 carbon atoms and 1-3 heteroatoms, at least one heteroatom being placed between two carbon atoms; or

b) a saturated or unsaturated cyclic moiety or an aromatic or heterocyclic moiety having from 5-20 atoms comprising one or two-ringed structures, wherein each ring comprises 3-8 carbons and 0-4 heteroatoms,

said heteroatoms each independently selected from the group consisting of N, O, and S; wherein each ring optionally is further substituted with one or more groups selected from

i) C_{1-6} alkyl,

ii) C_{1-6} alkoxy,

iii) C_{1-6} alkylthio,

iv) halo,

v) carboxyl,

vi) $-CO_2-C_{1-4}$ alkyl,

vii) keto,

viii) nitro, and

ix) a saturated or unsaturated cyclic moiety, or an aromatic or a heterocyclic moiety comprising one or two ringed structures wherein each ring comprises 3-8 carbons ~~interrupted by~~ and 0-4 heteroatoms, said heteroatoms each independently selected from the group consisting of N, O, and S;

wherein each ring optionally is further substituted with one or more groups selected from i)-viii) as defined above;

B) an amine or an amide substituted with at least one substituent as defined in R_3 above;

C) a thiol, a sulfide, a sulfoxide, a sulfone, a thioester or a thioamide optionally substituted with one substituent as defined in R_3 above; or

D) an ether $-OR_3$ wherein R_3 is as defined above;

G is (a) halogen, (b) C_1-C_6 alkyl, or (c) -OR wherein R is (a') -R'', wherein R'' is hydrogen or C_1-C_6 alkyl optionally containing a terminal -OR''' or -OC(O)R''' moiety wherein R''' is hydrogen or C_1-C_6 alkyl, or (b') -C(O)R''' wherein R''' is as previously defined, and

$\mathbf{R_2}$ is (a) C_1-C_{12} alkyl, (b) -OR"", in which R"" is a straight chain or branched C_2-C_9 alkyl which may be substituted at the terminal carbon atom by a phenyl group, or (c) $-(CH_2)_nOR'''$ wherein n is an integer of 1 to 7 and R''' is hydrogen or C_1-C_6 alkyl;
with the proviso that $\mathbf{R_1}$ is other than a heterocyclic moiety having a labile hydrogen atom so that said moiety acts as a carboxylic acid analogue;
together with a pharmaceutically acceptable diluent or carrier.

11. (Previously Presented) The composition according to claim 10 wherein $\mathbf{R_1}$ is a saturated or unsaturated cyclic moiety, an aromatic moiety or a heterocyclic moiety having from 5-20 atoms comprising one or two-ringed structures, wherein each ring comprises 3-8 carbons and 0-4 heteroatoms, said heteroatoms each independently selected from the group consisting of N, O, and S; optionally further substituted with at least one substituent selected from the group consisting of lower alkyl, halogen, nitro, cyano, -SR''', -NHR''', $-N(R''')_2$, -OR''', -COR''' , -C(O)OR''' or NH-COR''' moiety wherein R''' is hydrogen or C_1-C_6 alkyl.

12. (Original) The composition according to claim 10 wherein $\mathbf{R_1}$ is a heterocyclic moiety selected from the group consisting of an imidazolyl, an imidazolinyl, a morpholino, a piperidyl, a piperazinyl, a pyrazolyl, a pyrrolyl, a pyrrolidinyl, a triazolyl, and a tetrazolyl, optionally further substituted wherein the substituent is selected from the group consisting of C_{1-6} alkyl, C_{1-6} alkyloxy, C_{1-6} alkylthio, keto, carboxy, or nitro, wherein C_{1-6} alkyl, C_{1-6} alkoxy and C_{1-6} alkylthio are intended to include saturated and unsaturated linear, branched and cyclic structures.

13. (Original) The composition according to claim 10 wherein $\mathbf{R_1}$ is imidazolyl, pyrazolyl, 2-methyl thio-2-imidazolinyl, or 4-methylpiperidinyl.

14. (Original) The composition according to claim 10, wherein A-----B is a 6(1) double bond, and **G** is -OH or lower acyloxy.

15. (Original) The composition according to claim 14 wherein $\mathbf{R_2}$ is 1,1-dimethylheptyl or 1,2-dimethylheptyl and wherein $\mathbf{R_1}$ is selected from the group consisting of imidazole, pyrazole, oxazole, isoxazole, tetrahydropyridine, pyrazoline, oxazoline, pyrrolidine, imidazoline, 2-thio-imidazole, 2-methylthio-imidazoline, 4-methyl-2-imidazoline, 4,4-dimethyl-2-imidazoline, methyl sulfide, methylsulfoxide, acetamido, benzamide, cyano, 1,2,4-triazole, 1,3,4-triazole, 1,2,3,4-tetrazole, 1,2,3,5-tetrazole, thiophene, phenyl, morpholine, thiomorpholine, thiazolidine, glycerol, piperazine, piperidine and tetrahydropyran, optionally further substituted wherein the substituent is selected from the group consisting of $C_{1\text{-}6}$ alkyl, $C_{1\text{-}6}$ alkyloxy, $C_{1\text{-}6}$ alkylthio, keto, carboxy, or nitro, wherein $C_{1\text{-}6}$ alkyl, $C_{1\text{-}6}$ alkoxy and $C_{1\text{-}6}$ alkylthio are intended to include saturated and unsaturated linear, branched and cyclic structures.

16. (Original) The composition according to claim 15 wherein $\mathbf{R_1}$ is imidazole, pyrazole, 2-methyl thio-2-imidazoline, or 4-methylpiperidine.

17. (Original) The composition according to claim 10 wherein A-----B is absent and G is OH or a lower acyloxy group.

18. (Previously Presented) The composition according to claim 10 wherein the active ingredient is selected from the group consisting of: (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(imidazolomethyl)-6a,7,10,10a-tetrahydro-6H-dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(pyrazolomethyl)-6a,7,10,10a-tetrahydro-6H-dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(1H-imidazol-2-ylsulfanyl methyl)-6a,7,10,10a-tetrahydro-6H- dibenzo[b,d]pyran; (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy-9-(4-piperidinopiperidinemethyl)-6a,7,10,10a- tetrahydro-6H-dibenzo[b,d]pyran; and (+)-(3S,4S)-6,6-Dimethyl-(1,1-dimethylheptyl)-1-hydroxy -9-(4-methylpiperidine methyl)-6a,7,10,10a-tetrahydro-6H-dibenzo[b,d]pyran.

19. (Original) The composition according to claim 10 wherein the carrier or diluent is an aqueous cosolvent solution comprising a pharmaceutically acceptable cosolvent,

a micellar solution prepared with natural or synthetic ionic or non-ionic surfactants, or a combination of such cosolvent and micellar solutions.

20. (Original) The composition according to claim 19 wherein the carrier is (a) a solution of ethanol, a surfactant, and water or (b) an emulsion comprising a triglycerides, lecithin, glycerol, an emulsifier, an antioxidant, and water.

Claims 21. to 42. (Cancelled)